

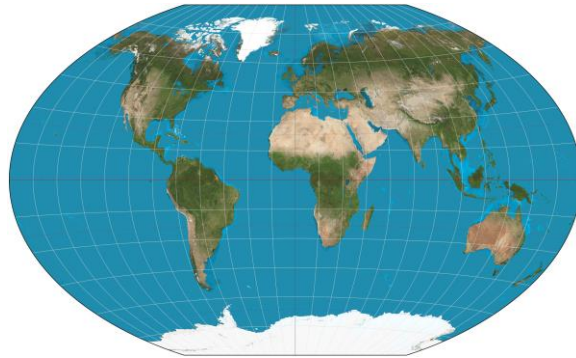


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CREATING A CLIMATE FOR GREAT LEARNING,  
SUCCESS AND OPPORTUNITY

# Year 10 - Geography Semester 1B 2023-2024



**Creating a climate for great learning, success and opportunity**



CREATING A CLIMATE FOR GREAT LEARNING, SUCCESS AND OPPORTUNITY

<b>Word Revolution</b>	<b>Development indicator</b>	<b>Measures used to describe how developed a country is</b>
	<b>Composite indicator</b>	<b>An indicator that takes information from multiple measures and expresses them as one value.</b>
	<b>Employment structure</b>	<b>The number of people employed in the 4 jobs types of primary, secondary, tertiary and quaternary</b>

**1:**

**Development indicators**  
Development indicators are used to measure how developed a country is.

**Economic Indicators**  
Gross National Income (GNI) - The total value of all goods and services produced in a country.  
Economic structure – The percentage of the population in primary, secondary, tertiary and quaternary jobs.

**Social indicators**  
Literacy rate – The % of the population who can read or write  
Life expectancy – The average number of years a person is expected to live in a country  
Birth rate – The number of babies born every year per every 1000 people  
People per doctor – How many people there are for every doctor.  
Death rate – the number of people per thousand who die in a country

**3:**

**Job types**  
There are four types of job. These are primary, secondary, tertiary and quaternary jobs.  
Primary jobs involve getting raw materials from the natural environment e.g. Mining, farming and fishing.  
Secondary jobs involve making things (manufacturing) e.g. making cars and steel.  
Tertiary jobs involve providing a service e.g. teaching and nursing.  
Quaternary jobs involve research and development e.g. IT.

**Employment structure**  
Employment in the different job categories changes as a country develops. In an LIC, most people are employed in the primary sector, in jobs such as farming and fishing with very few people employed in the more 'technical' sectors of IT and research.  
However, as a country develops, the majority of people are employed in the tertiary or quaternary sectors with a small percentage in the primary sector.

**2:**

**How reliable are development indicators?**  
Despite being used across the world, development indicators can be very misleading at describing how developed a country is. For example, using GNI can be really inaccurate.  
Economic indicators such as GNI, use averages to show wealth of a country. If there is a significant difference between the very rich and very poor in a country, the GNI will not show these differences. The GNI also doesn't show how hard people work in different jobs.  
GNI can also be inaccurate because people might not be honest about how much they earn

**Human Development Indicator (HDI)**  
To help give a more realistic view of how a country is developing, the HDI takes information from social and economic indicators and shows them as one value, this is called a composite indicator. The HDI uses:

- Income
- Education
- Life Expectancy

- Questions**
- 1. What does GNI show?**
  - 2. Describe one social indicator**
  - 3. Give one disadvantage of GNI**
  - 4. What is a composite indicator?**
  - 5. What sort of jobs are classed as tertiary jobs?**
  - 6. What happens to the number of people in primary jobs as a country develops?**



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<b>Word Revolution</b>	<b>Demographic Transition Model</b>	A model that shows how social indicators change as a country develops
	<b>Population pyramid</b>	A histogram that shows the breakdown of a population by gender and age
	<b>Colonialism</b>	The policy or practice of acquiring full or partial political control over another country, <u>occupying</u> it with <u>settlers</u> , and <u>exploiting</u> it economically.

**2:**

**Population Pyramids**

Population pyramids show the breakdown of a population by gender and age.

The wider the base, the higher the birth rate which normally indicates an LIC. This is because of factors including poor education on contraception and higher infant mortality.

The wider the top of the pyramid, the higher the life expectancy which normally indicates a HIC. This is because of factors including, better health care.

Generally, LICs have a steep sided pyramid whilst a HIC tends to be more of a rectangular pyramid.

**3:**

**Causes of uneven development**

There are significant variations in levels of development across the world. This is known as the development gap. Both physical and human factors have caused uneven development,

**Human factors influencing uneven development**

Human factors affecting uneven development include colonialism, corrupt governments and war. These factors can put LICs further into debt which can then deny them the opportunity to develop and progress quickly

**Physical factors influencing uneven development**

Physical factors include the following.

The climate of a country can limit the number and type of crops grown and then sold. In extreme environments, survival is incredibly difficult which they make working and providing an income difficult.

Landlocked countries can cause uneven development. In places like Malawi which have no coastline, trade is extremely difficult which can then cause slow development.

**1:**

**Demographic Transition Model (DTM)**

Social development indicators such as birth rate, death rate and life expectancy can be shown in the DTM. The DTM shows how these indicators change as a country develops.

In stage one, birth rate and death rate are high due to factors such as poor health care and education.

However, as a country develops both birth rate and death rate decrease due to better health care and education.

By stage 5, the birth rate is dropping below the death rate. Both the birth and death rate are low.

**Questions**

- 1. What are the birth rate and death rates like in stage one of the DTM?**
- 2. What are the birth rate and death rate like in stage 5 on the DTM?**
- 3. How are the population pyramids of LIC and HICs different?**
- 4. Why are the population pyramids of LIC and HICS different?**
- 5. Describe one human factor influencing uneven development**
- 6. Describe one physical factor influencing uneven development**



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<b>Word Revolution</b>	<b>Aid</b>	<b>When one or more countries give money to other countries to help them to develop.</b>
	<b>International migration</b>	<b>Moving from one country to another.</b>
	<b>Microfinance loans</b>	<b>Money is lent to LICs to help them develop. Available to people and businesses who normally struggle to get credit.</b>

**1:**

**Consequences of uneven development**

- Many LICs are now dependant on HICs and some NEEs for aid. Many LICs are heavily in debt due to borrowing money from the World Bank to pay for hospitals and healthcare and large-scale projects such as building dams and reservoirs.
- Health: Levels of health vary between different countries and within countries. Many people in LICs can't access safe, clean water and sanitation. This can lead to higher incidences of disease and lower life expectancies. HICs have good, clean water supplies and sanitation systems. Life expectancy is usually higher so people in HICs can expect to live into old age.
- Wealth: There are large variations in wealth between countries and within countries. It's estimated that the richest 10% of the world's population receives 52% of global income. Meanwhile, the poorest 50% receives just 8% of global income.

**3:**

**Strategies to close the development gap**

- Investment: large companies can locate part of their business in other countries. This helps a country to develop as the companies build factories, lay roads and install internet cables.
- Aid: when one or more countries give money to other countries. The money as to be spent on things that will benefit the population.
- Using intermediate technology: using equipment and techniques that are suitable for their country of use. Many poorer countries don't have the skills to maintain expensive equipment. Small-scale, basic solutions are usually more appropriate.
- Debt relief: many LICs owe money to other countries. Debt relief is when debts are either reorganised to make them more manageable, or reduced.
- Microfinance loans: when money is lent to LICs to help them to develop. They are available to people and businesses who many normally struggle to get credit.

**2:**

**Consequence of uneven development: international migration**

- International migration (moving from one country to another) was highest in 2015. This was the result of conflict and poverty.
- In addition, the more people become more aware of the development gap between LICs and NEEs and HICs, the more they are attracted by the potential economic opportunities available to them.
- The growth in the use of mobile technologies, particularly in Africa, has led to greater global awareness amongst the population.
- The UK receives migrants from various countries, both within the EU and from outside. Often these migrants are highly educated and/or skilled. This leads to a brain drain in the country where they were trained and educated. On the other hand, these migrants send money home to their families (remittances).

**Questions**

1. What is the development gap?
2. What is aid?
3. How can intermediate technology help to close the development gap?
4. How does uneven development cause international migration?
5. What is life expectancy?
6. What is the 'brain drain'?



<b>Word Revolution</b>	<b>Fair trade</b>	Trade which ensures that producers in LICs get better trading conditions and a better wage.
	<b>Fair trade premium</b>	<ul style="list-style-type: none"> <li>An extra sum of money given to producers to invest in improving the quality of their lives.</li> </ul>
	<b>GDP</b>	<ul style="list-style-type: none"> <li><b>Gross Domestic Product-</b> the total value of goods and services produced by a country in a year.</li> </ul>

**1:**

**Uneven development: trade**

- Wealthier regions, such as Asia, Europe and North America, dominate trade because they export secondary (processed) goods which earn more income.
- As these countries accumulate wealth they become more powerful. This means they are able to dictate the terms of trade to their advantage.
- LICs trade primary products LICs trade mostly primary goods. These goods have low value and earn them little money. This means they have limited funds to invest in infrastructure and services that would enable them to develop.
- LICs rely heavily on single exports LICs rely mostly on single exports These are subject to fluctuations in market price.
- This means that a drop in the market value risks them losing a high proportion of their income that would enable them to develop.

**3:**

**Nigeria introduction**

- Location: West Africa, sharing a border with Benin, Niger, Chad and Cameroon. Borders the Gulf of Guinea (Atlantic Ocean) to the south.
- The most populous and economically developed country in Africa. Its recent growth, based on the sale of oil, has led to the country's transformation from a LIC to a NEE.
- Global importance: 31st largest GDP in 2018. According to the United Nations, it has the 7th largest population in the world. Lagos, Nigeria's largest city, is a thriving 'world city', with a strong financial and economic base.
- Regional importance: Has the fastest growing economy in Africa and the highest GNP on the continent. Nigeria has the largest population on the continent and the third-largest manufacturing sector. The country also has the largest agricultural output and the highest number of cattle.

**2:**

**Strategies to reduce the development gap: fair trade**

Fairtrade sets standards for trade in LICs so they can't be taken advantage of. It helps to ensure that producers (farmers) get a fair deal for their crops:

- Guaranteeing the farmer a fair price
- Ensuring they get all the money from the sale of their crop
- Ensuring that profit is re-invested back into the community
- Ensuring the farming is carried out sustainably
- Ensuring the product gains a stronger position in the world market
- The Fair Trade Premium is a sum of money available from the Fair Trade foundation to be spent upon improving yields, farming practices, health care or education.

Example: Over 90% of small coffee farmers in eastern Uganda have joined the Gumutindo Coffee Cooperative. They have made savings through economies of scale and they now have a fair price for their produce..

**Questions**

- Give one benefit of fair trade
- What is the Fair Trade Premium?
- Describe the location of Nigeria.
- What is GDP?
- Why is Nigeria regionally important?
- Why is Nigeria globally important?



<b>Word Revolution</b>	<b>TNCs</b>	<b>Transnational Corporations-</b> companies that operate in multiple countries, locating their headquarters, production and sales in different countries.
	<b>International</b>	<b>Existing, occurring, or carried on between nations.</b>
	<b>Delta</b>	<b>River sediments deposited when a river enters a standing body of water such as a lake, lagoon, sea or ocean.</b>

**1:**

**TNCs in Nigeria's oil business**

- The Niger Delta region, an important wetland and coastal ecosystems, is home to Nigeria's oil and gas industry. Nigeria's oil boom took off during the 1970s. It relied on the expertise of large TNCs, including Royal Dutch Shell (UK & Netherlands) and Chevron (USA).
- Pipelines around the Gulf of Guinean transport oil to large tankers that ship the oil to Europe and the USA where it is refined to produce petrol and other oil-based products.
- In an attempt to keep more profits from oil within the country, the Nigerian government has set up the Nigerian National Petroleum Corporation (NNPC) to form joint ventures with TNCs.

**3:**

**Advantages and disadvantages of TNCs in Nigeria**

Advantages

- ✓ International links= access to world markets
- ✓ Financial investment into the economy
- ✓ Provides jobs and training to local people
- ✓ Higher wages
- ✓ Introduces new technology that otherwise might not be available

Disadvantages

- Profits leave the country and benefit shareholders, often in HICs
- Causes significant environmental damage, without taking responsibility for cleaning up
- Powerful TNCs can exert pressure on the Nigerian government
- Raw materials are exported before being refined which reduces profits in Nigeria

**2:**

**Environmental impact of oil in Nigeria**

- Farmland has been damaged by leaking oil pipes meaning crops no longer grow in some areas.
- Oil pollution from tankers and damaged pipelines kills fish in the sea and the delta.
- When gas is burned off from the oil greenhouse gases are released, contributing to climate change. The process also causes respiratory problems for local people.
- 40 million litres of oil are spilt in the Niger Delta each year
- In the Niger Delta, the contamination of fish and crops has destroyed livelihoods. Life expectancy in the Niger Delta is ten years below the national average.
- The government has established laws for the protection of the environment from oil exploration. However, for these to be effective, responsible agencies must effectively implement, enforce and monitor them.

**Questions**

- 1. What are TNCs?**
- 2. When did Nigeria's oil boom take off?**
- 3. How many litres of oil are spilt in the Niger Delta each year?**
- 4. How have oil spills affected life expectancy in the Niger Delta?**
- 5. Give two advantages of TNCs in Nigeria.**
- 6. Give two disadvantages of TNCs in Nigeria.**



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Word Revolution	Relief	The way the landscape changes in height
	Profile	A view of geographical data (e.g. cross or long profile)
	Hydrological cycle	Known as the water cycle. The water cycle describes how water is exchanged (cycled) through Earth's land, ocean, and atmosphere.

**1:**

**Physical landscapes in the UK**  
 The UK has a varied landscape as the relief of the land changes in different parts of the country.

**Relief** refers to the way the landscape changes in height. Upland areas are high above sea level. They are often (but not always) mountainous. Lowland areas are not very high above sea level. They are often flat. The shape of the landscape is largely determined by **glaciation** and **rivers**.

**2:**

**River profiles (long and cross profile)**  
 A **long profile** is a line representing the river from its source (where it starts) to its mouth (where it meets the sea). It shows how the river changes over its course.

**Upper course** - in the upper course, where the river starts, there is often an upland area. The river's **load** is large in the upper course, as it hasn't been broken down by erosion yet.

**Lower course** - in the lower course, the land is a lot flatter. The river's load is fine sediment, as erosion has broken down the rocks.

A **cross profile** shows a cross-section of a river's channel and **valley** at a certain point along the river's course. As the river flows downhill, there is an increase in **vertical erosion**. The channel is shallow and narrow because there is not a lot of water in the channel. As the river flows into the middle course, there is some vertical erosion but more **lateral erosion**. The channel is wider and deeper as a result. In the lower course, the channel is at its widest and deepest.

**2:**

**Drainage basins**  
 A river's water can fluctuate over time. Understanding the **hydrological cycle** is useful in order to understand how and why the amount of water fluctuates.

A drainage basin is the area of land around the river that is drained by the river and its **tributaries**.

**Watershed** - the area of high land forming the edge of a river basin

**Source** - where a river begins

**Mouth** - where a river meets the sea

**Confluence** - the point at which two rivers meet

**Tributary** - a small river or stream that joins a larger river

**Channel** - this is where the river flows

- Questions
1. Which two factors can change the shape of landscapes?
  2. Where do rivers begin?
  3. Where does water flow through in the hydrological cycle?
  4. Is the land steeper or flatter in the lower course of a river?
  5. In the upper course of a river, is there more lateral or vertical erosion?
  6. Where is the river channel widest and deepest?



Word Revolution	Erosion	The process which wears away the river bed and banks
	Deposition	The process where sediment is dropped
	Landform	Features of the Earth's surface which make up the terrain, such as mountains or valleys

**1:** Processes of erosion  
 Erosion is the process that wears away the river bed and banks. Erosion also breaks up the rocks that are carried by the river. There are four types of erosion:  
**-Hydraulic action** - This is the sheer power of the water as it smashes against the river banks. Air becomes trapped in the cracks and causes the rock to break apart.  
**-Abrasion** - When pebbles grind along the river bank and bed in a sand-papery effect.  
**-Attrition** - When rocks that the river is carrying knock against each other. They break apart to become smaller and more rounded.  
**-Solution** - When the water dissolves certain types of rocks, e.g. limestone.

**River landforms: Interlocking spurs**  
 In the upper course there is more vertical erosion.  
 The river cuts down into the valley by eroding it, through the processes of hydraulic action and abrasion.  
 If there are areas of hard rock which are harder to erode, the river will bend around it.  
 This creates interlocking spurs of land which link together like the teeth of a zip.

**2:** Types of transportation  
 The river picks up sediment and carries it downstream in different ways. There are four types of transportation:  
**Traction** - large, heavy pebbles are rolled along the river bed. This is most common near the source of a river, as here the load is larger.  
**Saltation** - pebbles are bounced along the river bed, mostly near the source.  
**Suspension** - lighter sediment is suspended (carried) within the water, most commonly near the mouth of the river.  
**Solution** - the transport of dissolved chemicals. This varies along the river depending on the presence of soluble rocks.  
Deposition  
 When the river loses energy, it drops any of the material it has been carrying. This is known as deposition.  
 Factors leading to deposition: shallow water, at the end of the river's journey, at the river's mouth, when the volume of the water decreases

- Questions
1. Name one process of erosion and explain how it works.
  2. Name one process of transportation and explain how it works.
  3. Why do rivers lose their energy?
  4. What is vertical erosion?
  5. Are interlocking spurs created by erosion or deposition?
  6. How are interlocking spurs created?





<b>Word Revolution</b>	<b>Resistant rock</b>	<b>Usually hard rock, which is longer-lasting against the processes of erosion (e.g. granite and chalk)</b>
	<b>Gorge</b>	<b>A narrow valley with steep, rocky walls, found between hills or mountains</b>
	<b>Discharge</b>	<b>The volume of water which flows through a river at a given time</b>

**1:**

**Erosional landforms-** the process of **erosion** can create different landforms. The erosional features are often found in the **upper course** of the river.

**Waterfall and gorges**  
 A **waterfall** is a sudden drop along the river course. It forms when there are horizontal bands of resistant rock (hard rock) positioned over less resistant rock (soft rock).

- 1.The soft rock is eroded quicker than the hard rock and this creates a step.
- 2.As erosion continues, the hard rock is undercut forming an overhang.
- 3.Abrasion and hydraulic action erode to create a plunge pool.
- 4.Over time this gets bigger, increasing the size of the overhang until the hard rock is no longer supported and it collapses.
- 5.This process continues and the waterfall retreats upstream.
- 6.A steep-sided valley is left where the waterfall once was. This is called a **gorge**.

**3:**

**Erosional and depositional landforms**

**Oxbow lakes**  
 Due to erosion on the outside of a bend and deposition on the inside, the shape of a meander will change over a period of time.

Erosion narrows the neck of the land within the meander and as the process continues, the meanders move closer together.

When there is a very high **discharge** (usually during a flood), the river cuts across the neck, taking a new, straighter and shorter route.

Deposition will occur to cut off the original meander, leaving a horseshoe-shaped oxbow lake.

**2:**

**Erosional and depositional landforms**

**Meanders**  
 As the river makes its way to the **middle course**, it gains more water and therefore more energy. **Lateral erosion** starts to widen the river. When the river flows over flatter land they develop large bends called **meanders**.

- 1.As a river goes around a bend, most of the water is pushed towards the **outside**. This causes increased speed and therefore increased erosion (through **hydraulic action** and **abrasion**).
- 2.The lateral erosion on the outside bend causes undercutting of the bank to form a **river cliff**.
- 3.Water on the inner bend is slower, causing the water to slow down and deposit the eroded material, creating a gentle slope of sand and shingle.
- 4.The build-up of deposited sediment is known as a **slip-off slope** (or sometimes river beach).

**Questions**

- 1.In which course of the river do waterfalls form?
2. What types of erosion cause the undercutting of a waterfall?
- 3.In the upper course of a river, is river discharge high or low?
- 4.Which bend on a meander would you find a river cliff?
- 5.Which bend on a meander has the slowest moving water?
- 6.What landform is created when a meander is cut off from the river channel?



Word Revolution	Floodplain	An area of land which is covered in water when a river bursts its banks
	Alluvium	Deposited silt/ sediment from a river flood
	Saturation	The land is holding as much water or moisture as can be absorbed

1: **Depositional landforms**  
**Floodplains**  
 Floodplains form due to both **erosion** and deposition. Erosion removes any **interlocking spurs**, creating a wide, flat area on either side of the river. During a flood, material being carried by the river is deposited (as the river loses its speed and energy to transport material). Over time, the height of the floodplain increases as material is deposited on either side of the river.  
 Floodplains are often agricultural land, as the area is very fertile because it's made up of **alluvium**. The floodplain is often a wide, flat area caused by **meanders** shifting along the valley.  
**Estuaries**  
 An **estuary** is where the river meets the sea. The river here is tidal and when the sea retreats the volume of the water in the estuary is reduced. When there is less water, the river deposits silt to form **mudflats** which are an important habitat for wildlife.

3: **Flood risk factors**- flooding occurs when a river bursts its banks and overflows onto the surrounding land. There are many factors which can cause a flood:  
**-Prolonged/ heavy rainfall** - if it rains for a long time, the land around a river can become **saturated**. If there is more rainfall it cannot be soaked up, so it runs along the surface - this is known as **surface run-off**.  
**-Relief** - a steep valley is more likely to flood than a flatter valley because the rainfall will run off into the river more quickly.  
**-Geology - permeable rocks** allow water to pass through pores and cracks, whereas **impermeable rocks** do not. If a valley is made up of impermeable rocks, there is a higher chance of flooding as there is an increase in surface run-off.  
**-Vegetation** - trees and plants absorb water, this is known as **interception**. Lots of vegetation reduces flood risk. Deforestation will increase the flood risk, as the water will not be intercepted and flow into the river.  
**-Urban land use** - when an area surrounding a river is built on, there is an increase in the amount of tarmac and concrete, which are impermeable surfaces. Drains and sewers take water directly to the river which increases flood risk.

2: **Levees**  
 Levees occur in the lower course of a river when there is an increase in the volume of water flowing downstream and flooding occurs.  
 -Sediment that has been eroded further upstream is transported downstream.  
 -When the river floods, the sediment spreads out across the floodplain.  
 -When a flood occurs, the river loses energy.  
 The largest material is deposited first on the sides of the river bank and smaller material further away.  
 -After many floods, the sediment builds up to increase the height of the river bank, meaning that the channel can carry more water (a greater discharge) and flooding is less likely to occur in the future.

- Questions
1. What is the shape of a valley in a floodplain?
  2. What is a levee?
  3. Which landform occurs when the river meets the sea and becomes tidal?
  4. Name one physical cause of flooding and explain
  5. Name one human cause of flooding and explain
  6. Would an urban or rural area flood quicker? Why?



Word Revolution	Lag time	The time taken between peak rainfall and peak discharge
	Base flow	The normal discharge of the river
	Rising limb	Shows the increase in discharge on a hydrograph

**1:**

**A hydrograph** shows how a river responds to a period of rainfall.

The lag time can be short or long depending on different factors.

For example, if there is no vegetation in an area, the water runs off into the river quicker, therefore it would have a short lag time.

Alternatively, if there is plenty of vegetation in the area, the lag time would be longer as the plants would **intercept** the rainfall.

A short lag time means water is reaching the river quickly, so there is a chance of a flood.

**2:**

**Managing flooding (hard engineering strategies)**  
 Flooding can cause damage to homes, businesses, infrastructure and communications. **Hard engineering** involves building artificial structures which try to control rivers. They tend to be more expensive.

**Dams and reservoirs**  
 The dam traps water, which builds up behind it, forming a reservoir. Water can be released in a controlled way, rather than flooding.

- + Can be used to produce electricity (HEP). Reservoirs can attract tourists.
- Very expensive. Dams trap sediment which means the reservoir can hold less water. Habitats are flooded often leading to rotting vegetation. This releases methane which is a **greenhouse gas**.

**River straightening and dredging**  
 Straightening the river speeds up the water so high volumes of water can pass through an area quickly. Dredging makes the river deeper to hold more water.

- + More water can be held in the channel. Can reduce flooding in urban areas.
- Dredging needs to be done frequently. Speeding up the river increases flood risk downstream.

**3:**

**Managing flooding (hard engineering strategies)**

**Embankments**  
 Raising the banks of a river means that it can hold more water.

- + Cheap with a one-off cost. Allows for flood water to be contained within the river.
- Looks unnatural. Water speeds up and can increase flood risk downstream.

**Flood relief channels**  
 The floodwater flows into the relief channel and is taken either to an area where it can be absorbed or re-enters the river further down its course.

- + Removes excess water from the river channel to reduce flooding.
- Expensive to build. If water levels continue to rise, the relief channel may also flood.

- Questions**
- 1.Name three causes of flooding in a river
  - 2.What is a disadvantage of a dam?
  - 3.What does a hydrograph show?
  - 4.Does river dredging make the river deeper or wider?
  - 5.Suggest one factor which could increase lag time.
  - 6.Would local people prefer flood relief channels or embankments?



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